

Listing of Claims

1-8. (Canceled)

9. (Currently amended) The fibre-shaping peptide according to claim 39 [1], which additionally comprises one or more functional molecules attached to the ~~the~~ lysine residue of (i) or the glutamic acid residue of (ii).

10. (Original) The fibre-shaping peptide according to claim 9, wherein the functional molecule is an antibody molecule, a receptor, a ligand, an enzyme, an antigen, a label, a metal ion or a nucleic acid molecule.

11. (Currently amended) The fibre-shaping peptide according to claim 9, wherein the functional molecule is attached to the ~~the~~ lysine residue of (i) or the glutamic acid residue of (ii) via a second flexible linker.

12. (Previously presented) The fibre-shaping peptide according to claim 11, wherein the second flexible linker is a peptide linker comprising amino acids selected from the group consisting of glycine, alanine, serine and β -alanine.

13. (Previously Presented) The fibre-shaping peptide according to claim 11, wherein the second flexible linker is a poly- β -alanine peptide.

14-38. (Canceled)

39. (New) A fibre-shaping peptide comprising:

(i) a polypeptide according to SEQ ID NO: 3 with a first and optionally a second peptide monomer unit according to SEQ ID NO: 9 attached to the lysine residue shown at

position 17 of SEQ ID NO:3, wherein the first peptide monomer unit is attached via an amide bond to epsilon amino group of the lysine residue, and the optional second peptide monomer unit is attached to the lysine residue via carboxyl group of the lysine residue;

or

(ii) a polypeptide according to SEQ ID NO: 5 with a first and optionally a second peptide monomer unit according to SEQ ID NO: 10 attached to the glutamic acid residue shown at position 1 of SEQ ID NO:5, wherein said first peptide monomer unit is attached to the glutamic acid residue via an amide bond to a carboxylic acid group of the glutamic acid residue, and the optional second peptide monomer unit is attached via an amide bond to amino group of said glutamic acid residue.

40. (New) A fibre-shaping peptide comprising:

a polypeptide according to SEQ ID NO: 3 with a first and optionally a second peptide monomer unit according to SEQ ID NO: 9 attached to the lysine residue shown at position 17 of SEQ ID NO:3, wherein the first peptide monomer unit is attached via an amide bond to epsilon amino group of the lysine residue, and the optional second peptide monomer unit is attached to the lysine residue via carboxyl group of the lysine residue;

41. (New) A fibre-shaping peptide comprising:

a polypeptide according to SEQ ID NO: 5 with a first and optionally a second peptide monomer unit according to SEQ ID NO: 10 attached to the glutamic acid residue shown at position 1 of SEQ ID NO:5, wherein said first peptide monomer unit is attached to the glutamic acid residue via an amide bond to a carboxylic acid group of the glutamic acid residue, and the optional second peptide monomer unit is attached via an amide bond to amino group of said glutamic acid residue.

42. (New) The fibre-shaping peptide according to claim 40, which additionally comprises one or more functional molecules attached to the lysine residue.

43. (New) The fibre-shaping peptide according to claim 42, wherein the functional molecule is an antibody molecule, a receptor, a ligand, an enzyme, an antigen, a label, a metal ion or a nucleic acid molecule.

44. (New) The fibre-shaping peptide according to claim 42, wherein the functional molecule is attached to the lysine residue via a second flexible linker.

45. (New) The fibre-shaping peptide according to claim 44, wherein the second flexible linker is a peptide linker comprising amino acids selected from the group consisting of glycine, alanine, serine and β -alanine.

46. (New) The fibre-shaping peptide according to claim 44, wherein the second flexible linker is a poly- β -alanine peptide.

47. (New) The fibre-shaping peptide according to claim 41, which additionally comprises one or more functional molecules attached to the glutamic acid residue.

48. (New) The fibre-shaping peptide according to claim 47, wherein the functional molecule is an antibody molecule, a receptor, a ligand, an enzyme, an antigen, a label, a metal ion or a nucleic acid molecule.

49. (New) The fibre-shaping peptide according to claim 47, wherein the functional molecule is attached to the glutamic acid residue via a second flexible linker.

50. (New) The fibre-shaping peptide according to claim 49, wherein the second flexible linker is a peptide linker comprising amino acids selected from the group consisting of glycine, alanine, serine and β -alanine.

51. (New) The fibre-shaping peptide according to claim 49, wherein the second flexible linker is a poly- β -alanine peptide.